



# Developing an Army Water Security Strategy

Presented by

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# AEPI's Interest in an Army Water Security Strategy

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- Outgrowth of AEPI's groundbreaking work on sustainability
- Integrate different analytical perspectives
- Holistic and long-term opportunities
- Actionable recommendations



# Army Water Security Strategy: Motivators

## Institutional / Training

- Future imbalances between supply and demand
- Uncertainties concerning future availability, quality, and cost
- Uncertainties related to climate change and demography
- Renewable energy increases water demands
- More realistic training scenarios to match deployment water situation

## Operations

- Vulnerabilities associated with extended use of bottled water
- Use of integrated watershed management
- Uncertain duration makes optimal choice for water delivery less clear
- Complex interagency and international coordination requirements
- Integration of Army civil works expertise

## Supply Chain

- Spatial and temporal risk associated with embedded water
- Use Army market power to increase sustainability of suppliers



# Linkages with Leadership Initiatives

## Institutional

- Net Zero Installations Initiative
- Army Campaign Plan
- Army Sustainability Campaign Plan

## Operations

- Army Contingency Basing Strategy & Campaign Plan
- Army Base Camp ICDT
- Army Campaign Plan

## Supply Chain

- Green Procurement
- Fully –burdened cost of fuel and water

### Net Zero Hierarchy



TRADOC Pamphlet 525-7-7

The United States Army  
Concept Capability Plan  
for  
Army Base Camps  
in  
Full Spectrum Operation  
for the  
Future Modular  
Force  
2015-2024

07 December 2009

DRAFT

### Contingency Basing Strategy

Xxx XX, 2010



### Strategic Imperatives

- Develop Army policy for Contingency Bases.
- Synchronize efforts regarding Contingency Bases within the Army.
- Optimize capabilities for Contingency Bases.
- Integrate strategic planning for Contingency Bases jointly.



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# Marstel-Day's Methods

Engaging Army and  
Non-Army  
Stakeholders

7: Strategy  
Finalization

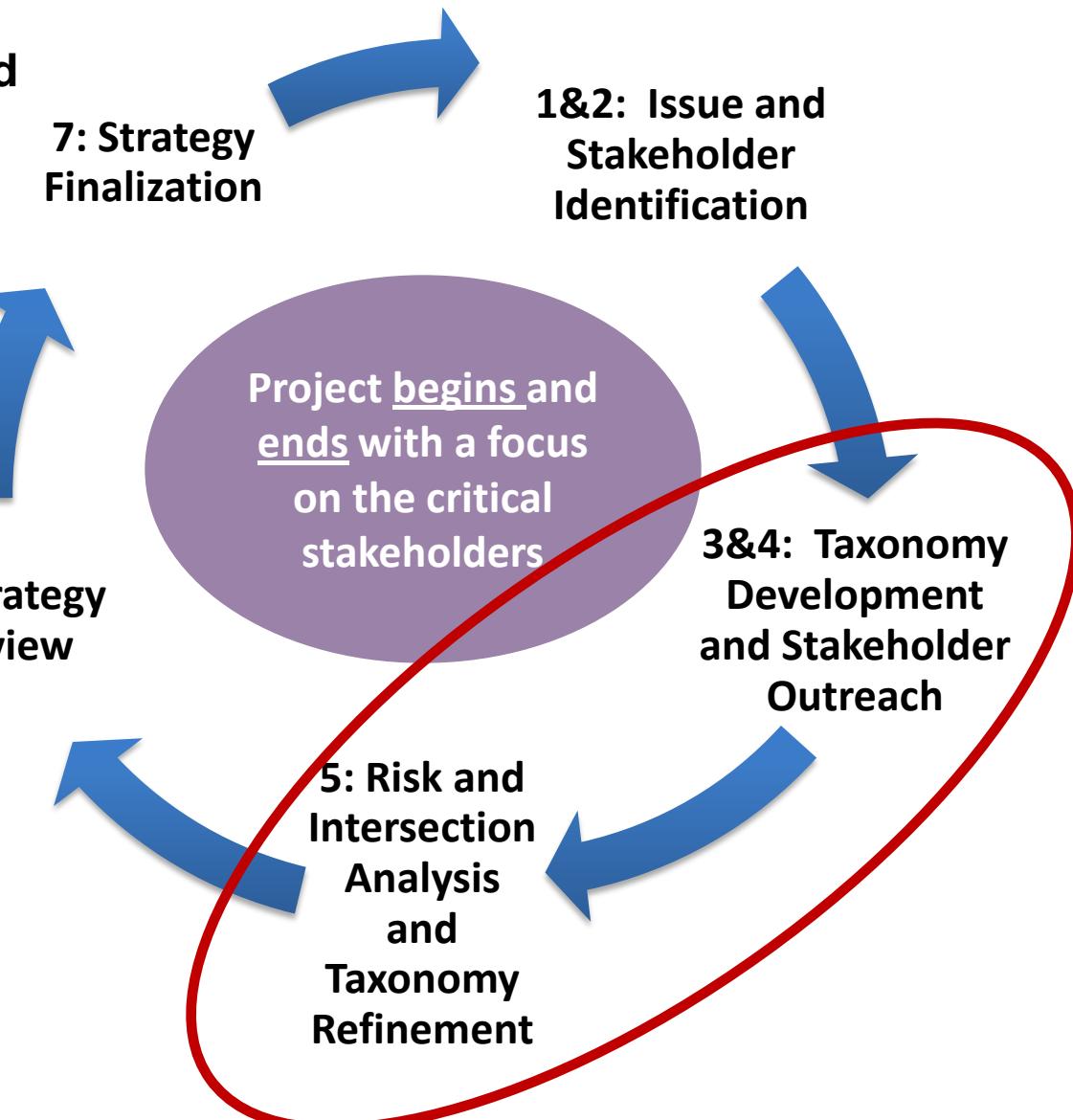
1&2: Issue and  
Stakeholder  
Identification

6: Strategy  
Review

Project begins and  
ends with a focus  
on the critical  
stakeholders

3&4: Taxonomy  
Development  
and Stakeholder  
Outreach

5: Risk and  
Intersection  
Analysis  
and  
Taxonomy  
Refinement





# Defining Water Security

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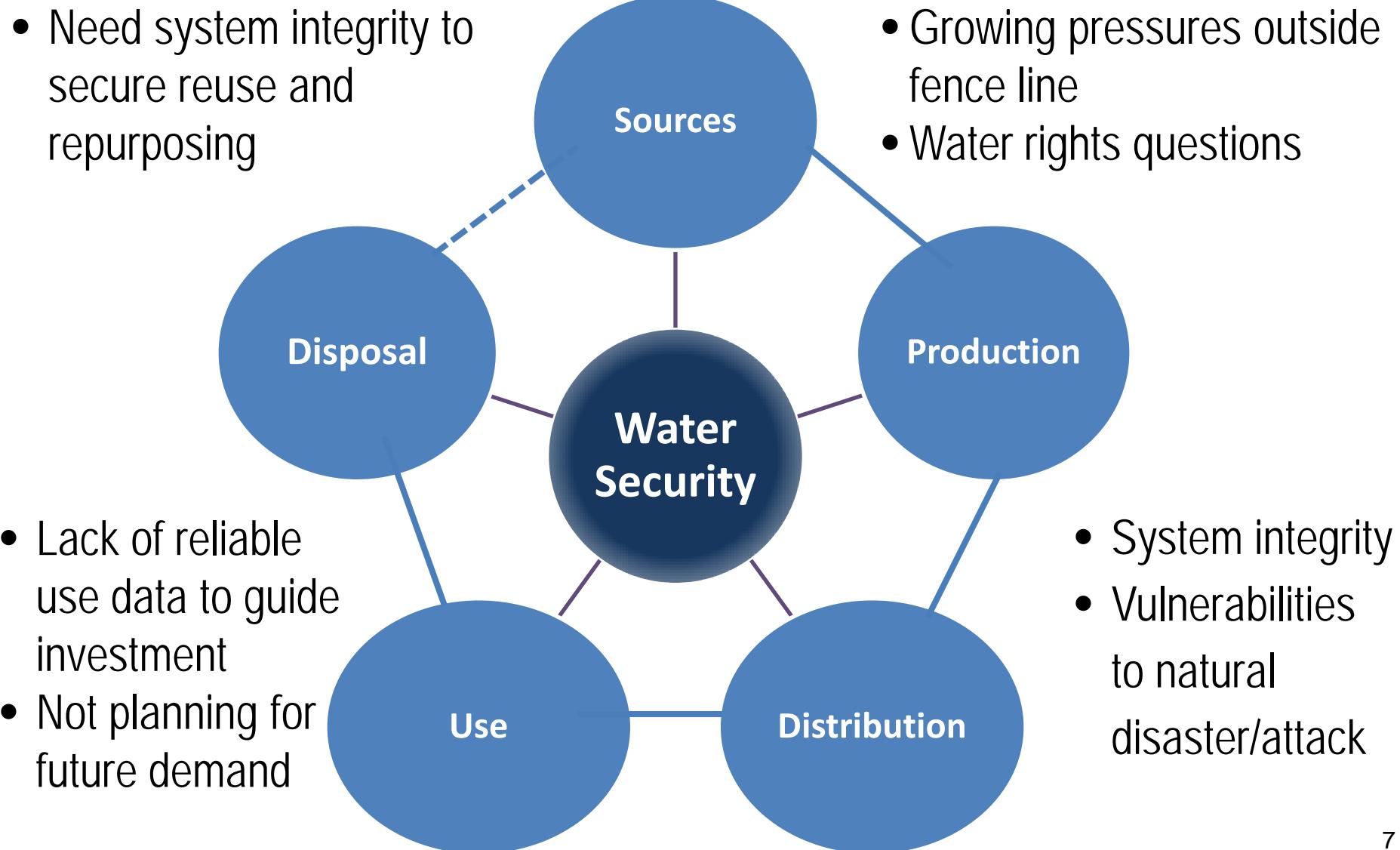
The capacity to ensure that water of suitable quality is provided at a sustained rate sufficient to support all current and future Army missions as needed.

Army water security should

- include deliberate efforts to minimize direct costs
- minimize associated energy and transportation costs
- mitigate occupational and combat-related risks
- avoid damage to the environment (at home and in host nations)
- ensure long-term, sustainable access
- engage other users of shared water resources to plan for future water needs



# Water-Related Vulnerabilities for Army Installations





# Water Resource Vulnerabilities in Army Overseas Operations

- Lack of oversight on waste water disposal
  - Water bottle waste; volume/hazards
- Local source unavailable or outside fence line
  - Source of friction with local community
- 
- ```
graph TD; WS((Water Security)) --- S((Sources)); WS --- P((Production)); WS --- D((Distribution)); WS --- U((Use)); WS --- D((Disposal)); S -.-> D
```
- The diagram illustrates the interconnected nature of water security. At the center is a dark blue circle labeled "Water Security". Five lines radiate from this central node to five surrounding blue circles, each representing a different aspect of the water supply chain: "Sources" (top), "Production" (right), "Distribution" (bottom right), "Use" (bottom left), and "Disposal" (left). A dashed line connects the "Sources" and "Disposal" nodes.
- Dependence on bottled water
  - Hydration during bio/chemical event
- Costs and risks of transporting bottled and bulk water

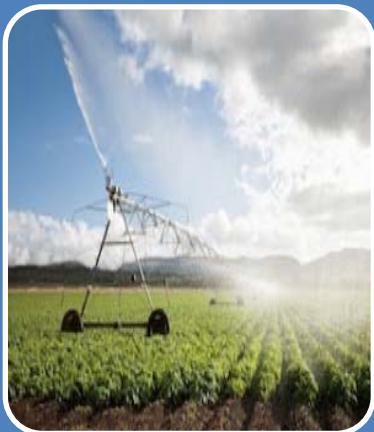


# Intersection with Other Resources



## Energy / Power Generation

- **Water intensive:** Fuel production (conventional, renewable, biofuels) and power generation
- **Energy intensive:** Pumping, treating, and transporting water; desalinization



## Agriculture/Environment/Ecosystem Services Resources

- **Increased competition:** Agriculture and local communities needs
- **Water quality concerns:** on and off the installation
- **Changing water patterns:** Impacts on raw water source, T&E habitats; challenges to and imperative for preservation of natural infrastructure



## Initial General Insights

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- Policy is compliance-driven; i.e., how to treat water entering and being discharged from an installation
- Little focus on quality, volume, and sustainability of offbase or shared water sources
- Long-term water projections not used
  - Base Realignment and Closure
  - Stationing
- Embedded water in supply chain; not identified as policy, security, or procurement issues
- Water supply in operations more coordinated and focused



## Initial Key Insights: Institutional

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- A unified water management program at the Secretariat and installation levels is needed
- Protecting Army water rights is vital
- Quality and type of information collected is questioned
- Municipal utility model may offer approach to comprehensive coordination, planning, management
- Attention to infrastructure tends to be reactive; long-term investment a challenge



## Initial Key Insights: Institutional (2)

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- Privatization can provide compelling savings and investments in infrastructure, but security issues
- Conservation planning done for compliance; long-term water security planning, as broadly defined here, is not included
- Conservation may not result in water security
- Water security issues not factored into land conservation programs
- Among installation, more action is taken where the water security problems are more severe



# Initial Key Insights: Operational

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- Institutions, organizations, personnel, and processes dedicated to improving solutions for meeting warfighter water needs
- Key concerns remain
  - Operator skill
  - Packaging and treatment technologies
- Rebuilding and sustaining Army skill sets in key capabilities is necessary
  - Civil engineering design (not just assembly)
  - Well drilling
  - Master planning
  - Integrated water resources management regionally



# Initial Key Insights: Operational (2)

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- Split Warrant Officer responsibilities into energy and water
- Diverse perspectives on bottled water; requires a hybrid solution
  - Proponents—benefits of soldier hydration; transportability
  - Opponents—focus on waste, life cycle cost, and operational vulnerabilities
- Best practices for contingency bases
  - Siting and planning access to local water sources
  - Leadership preparation (e.g. “Mayoral Cell” concept)
  - High sensitivity to host nation community perceptions / needs



## Next Steps

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- Translating the key findings into goals and objectives in a draft strategy document
- Circulating draft strategy for review
- Hosting review workshop in summer timeframe
- Finalizing and publishing strategy in fall timeframe



# Contact Information

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# Questions